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ABSTRACT

Speech and hearing therapists investigated the effectiveness of video taping as a multisensory approach to therapeutic procedures aimed at developing adequate communication skills for students with speech or hearing difficulties. They also studied the usefulness of such taping for parent counseling and inservice training of therapists and teachers. A van was used to provide a mobile classroom, thus allowing several schools to participate in the program. Over three years a total of 2366 students received services from a staff of 12 therapists who developed video tapes to assist in the identification, treatment, and evaluation of speech and hearing problems. Comparison of the results obtained from pre- and post-testing indicated that students receiving therapy utilizing video tapes did not improve significantly more than those receiving the traditional therapy. However, the parents of these students, their classroom teachers, and the speech therapists did profit from introduction of the video taping approach, largely due to the in-service training which was an integral part of the project. (PB)

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VIDECOR

ESEA TITLE III PROJECT 0030

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End of Project Report
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End-of-Project Evaluation Report

Regarding

VIDECOR

ESEA TITLE III Project No. 0030

Submitted June 30, 1972

by

Fresno Unified School District

2348 Mariposa Street

Fresno, California 93721

Arnold Finch, Ed. D.

Superintendent

Board of Education

Thomas A. MacMichael, President
H. M. Ginsburg, M.D., Clerk
John Toomasian
Keith Chun
Alice F. Reilly

Supervision by:

Robert S. Miner, Assistant Superintendent
Division of Instruction

Richard Kisling, Director
Department of Special Education

Project Director,
Bonnie J. Smith

Evaluation by:

Robert A. Hansen, Director
Office of Planning and Research Services

Gordon R. Graves, Program Evaluator
Office of Planning and Research Services

Project Evaluator,
Larry A. Zander

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Component IV - Financial Report

This report will be submitted under separate cover by the Fresno Unified School District Division of Business Services Office within 90 days of the termination of the project.

FINAL PROJECT REPORT

ESEA, TITLE III

COMPONENT I

STATISTICAL DATA

FINAL PROJECT REPORT

ESEA, TITLE III

COMPONENT II

DATA FOR U.S. OFFICE OF EDUCATION

FINAL PROJECT REPORT

ESEA, TITLE III

COMPONENT III

Program Narrative Report

CONTEXT

The Locale

1. What is the locale of the program?
2. What is the density of the population?
3. What are the population trends?
4. What are the major occupations of people in the locale?
5. What is the unemployment rate or trend?
6. What proportion of families in the locale are receiving welfare assistance?

1. Fresno Unified School District, Fresno, Fresno County, California

2. 1969 Census

   Fresno County: Area--5,968 square miles
   Population--413,329

   Fresno City: Area--43 square miles
   Population--165,972
   4,000 population per square mile

   School District: Area--74½ square miles
   Population 285,000

3. Fresno City Population trends show a slow steady growth:
   1961 - 141,000
   1963 - 151,000
   1967 - 161,000
   1970 - 171,000

4. Major occupations of people in the locale are:

Retail trade	21,000
Services	18,000
Processing of agricultural products	15,000

5. The unemployment rate, seasonally unadjusted because of the agricultural nature of the area was:

   Fresno County: January, 1970 - 8.0%
   January, 1971 - 8.1% - 14,600 people
   January, 1972 - 8.3% - 15,000 people

6. On October 22, 1971, 16.3% of the population in Fresno County was on welfare, 68,061 people out of 421,500.

*Source of reference: Fresno County Central Library Reference Department

The School System

1. What grade levels do the schools serve?
2. How many pupils are there in the school system? How many schools?
3. Are there any significant trends in the school system in enrollment, withdrawal, or transfer?
4. What is the per pupil cost of education in the school system?
5. What is the recent financial history of the school system?

1. The schools serve pre-school through adult levels.

2. Pupils in the school system:

Regular school:	56,736
Special Education:	925
Pre School:	720
Adult School:	13,500
Numbers of Schools:	
Elementary Schools:	55
Junior High Schools:	13
Senior High Schools	6
Continuation High School:	1
Special Education Schools:	2
Adult School Classes:	22

3. The school system enrollment has leveled off. No significant growth in the next two or three years is foreseen. The district has a slight percentage of late enrollments because of families participating in the fall harvest. There is also some instability of school populations in low socio-economic areas but the schools composed of ethnic minorities have reasonably stable populations. The rate of teacher turnover is one of the lowest in the state.

4. In 1970-71 the total expenditure per pupil was $799.58.
The projected total expenditure per pupil for 1971-72 is $825.00.

5. The Fresno Unified District has been and still is a low-wealth district. The tax rate is among the highest in the state although the per pupil cost of education is about $50.00 less than the state average.

Needs Assessment

1. What was the starting point for needs assessment?
2. How were the specific needs of the pupils identified?
3. What were these specific needs? Which were selected for the program?

1. Several concerns have always plaqued California speech and language therapists: (1) understaffing; (2) lack of time for parent and classroom teacher counseling because financial support of Speech, Hearing and Language Programs is based on generating A.D.A. by providing direct services to handicapped students; and (3) the seeming inability of traditional therapy procedures to produce correction of some disabilities at a satisfactory rate. After a workshop session with video-tape recording equipment, the therapist felt this media offered an exciting tool for expediting therapy and for therapist evaluation of therapeutic procedures to select productive methods and techniques. Since the District could not afford equipment to be used solely in the Speech, Hearing, and Language Program, suggestion was made that this might be a suitable project for Title III.

2. Specific needs were identified by considering what factors affect a spdech, hearing, and language handicapped child's development of adequate communication skills. The factors included: motivating the child and his parents; helping child and parent understand the facets of his disorder; enlisting the support of the classroom teacher with whom he spends a major portion of his waking hours; and providing him with a therapist with the professional expertise to diagnose and treat his disability.

3. The project was designed to meet the following needs as described in the original project application: 1) to expedite correction of mild and moderate communication disorders through a media which combines auditory and visual stimulation with replayable capabilities in these two dimensions for assessment by both child and therapist; 2) to subsequently reduce caseloads to allow enrollment of the approximately 800 children currently on the waiting list; 3) in lieu of the high cost of such equipment to school districts, to determine if the media would indeed effect more rapid and permanent mediation of communicative disorders; 4) to afford a means for the specialists to appraise, evaluate and improve their own therapeutic procedures since district fiscal inadequacy precludes financial provisions for adequate supervisory personnel; 5) to more intensively involve parents and classroom teachers in the therapeutic process; and 6) to expand consultative services for classroom teachers.

Historical Background

1. Did the program exist prior to the time period covered in the present report?
2. Is the program a modification of a previously existing program?
3. How did the program originate?
4. If special problems were encountered in gaining acceptance of the program by parents and the community, how were these solved so that the program could be introduced?
5. Provide a brief history of planning. Indicate which planning efforts were successful or were not successful. Describe how non-profit private schools and other agencies were involved in the planning.

1. No

2. No

3. This objective was identified by the 1968-69 staff of the Speech and Hearing Department of the Department of Special Education, Fresno Unified School District. Several speech and hearing specialists had an opportunity to briefly experiment with video-tape recording in their assigned schools. Since the itineracy of the speech and hearing program precluded efficient use of district equipment; since the already high cost of providing special services to speech and language handicapped children precluded purchase of such equipment for the department: and since the specialists believed this media could enhance and expand their services to handicapped children; it was suggested that this would be a suitable project for ESEA, Title III which stresses innovative programs.

4. The one adverse reaction to the program was that some teachers felt the cost of the equipment could not be justified in lieu of the financial crisis facing California schools in recent years. However, this reaction was infrequent and district schools, parents, and other educational agencies or institutions supported the program wholeheartedly from its inception.

5. Planning first required receiving administrative support of the proposal. After approval a staff committee was formed to write the initial application. This project was conceived and developed at the "grass roots" level and therein lies some of its deficiencies. Though the district supported the concept, personnel sophisticated in program planning were so involved in other proposals that they could give only cursory aid to this project. Staff therapists persisted in their efforts and obtained funding.

   The project did not become fully operational the first year because of delays in obtaining the mobilized classroom and television equipment. However, the therapists were able to experiment with the use of this media and through trial and error refine technical procedures, develop objectives and plan activities to meet the objectives. Very few changes have occurred since the project became operational. However, original plans were revised in one instance; it had been planned to develop in the third year, ITV programs to be broadcast to primary classrooms. The cost of producing these programs became prohibitive when the District curtailed all television programming for the 1970-71 term because of financial limitations. Another consideration was that no therapists were released from regular assignments to participate in project activities as their salaries were district supported. The time to develop good ITV programs was just not available.

The staff did not feel that this seriously hampered achievement of objectives because the classroom teachers were most responsive to viewing video tapes of the children in their classes and were apathetic to any TV programming that was general in nature.

PROGRAM

Scope of the Program

1. What numbers and kinds of participants were served by the program?
2. What were the specified objectives of the program?

1. a. 2,366 speech, hearing or language handicapped public school children
   b. 250 parents
   c. 67 classroom teachers
   d. 23 speech, hearing and language therapists

2. Project Objective

Speech and Hearing Therapists of the Fresno Unified School District will determine the suitability and effectiveness, in comparison with present procedures, of video-taping as a multi-sensory approach to therapeutic procedures for the development of adequate communication skills for students handicapped by speech, language, or hearing disabilities; and will demonstrate appropriate uses of video tapes for parent counseling and in-service training of therapists and classroom teachers.

Procedural Objectives to have been met during the past budget pe iod.

An organizational, managerial, inservice, and evaluative structure will be established which will facilitate the achievement of the objectives.

Selected first, second, and third grade speech, hearing or language handicapped children in the Videcor schools will have better knowledge of their disorders and will use more appropriate articulatory, and linguistic skills than those selected first, second and third grade handicapped children in the control schools as measured by significantly different mean scores (at .05 level) on the Photo Articulation Test, the Wepman Test of Auditory Discrimination, the Utah Test of Language Development and a special student Knowledge Test.

The parents of students receiving Videcor treatment will have a better knowledge of deviations in their children's speech and language patterns and will respond with more positive attitudes toward the disabilities than those parents of speech or hearing deficient children in the control schools, as measured by significantly different (at .05 level) responses to a questionnaire.

The Speech and hearing therapists will be able to evaluate therapeutic procedures; to identify successful techniques and discard those that are unproductive and to upgrade skills and develop a greater variety of techniques as indicated by their responses on a checklist after viewing selected video tapes of their therapy sessions.

The classroom teachers of the children receiving Videcor treatment will demonstrate improved ability to screen and refer students who can best profit from speech therapy as indicated by comparison of teacher screening and referrals fall, 1970, with fall, 1971.

The classroom teachers of the children receiving Videcor treatment will demonstrate better and increased carryover activities which support the speech therapy program than teachers in control schools as measured by significantly different responses to a questionnaire on supportive classroom activities.

Personnel

1. What kinds and numbers of personnel were added by the program?
2. What were their most important duties and activities?
3. How much time did each type of personnel devote to these responsibilities?
4. What special qualifications suited personnel to the requirements of their jobs?
5. What special problems were dealt with in recruiting or maintaining staff?

1. A. One coordinator
   B. One secretary
   C. One van driver and VTR operator
   D. One evaluator

2. A. Planning and implementation of all activities; staffing, scheduling, in-service, monitoring of all facets of operation.
   B. Monitoring scheduling; supervising data collection; ordering supplies; monitoring expenditures; typing of reports and reproduction; general office procedures necessary to operation.
   C. Maintenance and upkeep of van and equipment; developing technical procedures according to the types of activities planned by individual therapists; proposing modifications to increase efficiency of equipment.
   D. Planning the evaluation design, supervision of test administration, monitoring data collection; statistical treatment of data.

3. A. Coordinator - half time
   B. Secretary - half time for one year, 3/4 time for the next 1½ years
   C. Operator/Driver - full time
   D. Evaluator - one-tenth time

4. All certificated personnel hold valid California credentials in the area of exceptionality, several have Masters Degrees in Speech Pathology and hold the Certificate of Clinical Compentence of the American Speech and Hearing Association. The coordinator had had 20 years experience in speech and hearing therapy, had performed various supervisory duties for the department for several years and during the second year of the project was appointed coordinator of the regular program as well as project coordinator. Classified employees had had training and successful experience in skills necessary to fulfill their duties.

Organizational Details

1. What is the period of time covered by your report?
2. How much of the entire program does this cover?
3. Where were program activities located?
4. What special physical arrangements were used in these locations?
5. What provisions, if any, were made for periodic review of the program?
6. What important decisions were made on the basis of such reviews?
7. What provisions, if any, were made for inservice training?

1. July 1, 1969 to June 30, 1972

2. All

3. In 12 elementary schools of the Fresno Unified District designated as experimental schools and 12 elementary schools designated as control schools.

4. The mobilized classroom modified for video-tape recording was used in all experimental schools for a period of 5-6 weeks, 10-12 sessions which were considered the experimental treatment. Facilities for the control program were those normally assigned for therapy in the regular program.

5. During the second project period (the first fully operational year) the Videcor staff met weekly to discuss procedures, plan activities and review tapes. During the final project period meetings have been held as necessary.

6. Several modifications to the equipment and interior of the van were suggested to improve the lighting, fidelity of sound, and the quality of the video image. Also, replacement of one diagnostic test and revision of test administration were proposed and implemented. More efficient scheduling procedures were proposed and implemented. Several pre-service training sessions were held in the fall of the two fully operational project periods.

7. At least one monthly staff meeting was devoted to reviewing tapes of successful therapy techniques and video taping procedures. A project funded VTR workshop was conducted at Fresno State College (now California State University, Fresno) before the project's final period. In addition therapists would make after school appointments with the operator/driver to view other therapist's tapes when a technique had been found successful or to observe a similar case to one in their own caseload.

Activities or Services

1. What were the main activities (or services) in the program?
2. How were these activities (or services) related to specified program objectives?
3. What methods were used in carrying out each activity (or service)?
4. What was a typical day's or week's schedule of activities for the children (or others) who received the program?
5. How were pupils grouped for the various program activities?
6. What were teacher-pupil ratios (or aid-pupil, or adult-pupil, and so on) in each of these groupings?
7. How did pupils (or others) receive feedback on their individual daily progress?
8. How did parents receive feedback on their child's progress?
9. What amounts and kinds of practice, review, and quiz activities were provided for pupils (or others) in the program?
10. What special provisions were made for motivating pupils (or others)?
11. If a comparison group was used, what were important differences in the activities and methods used in this group and the activities and methods used with the program group?

1. A. Video-taped speech therapy sessions for handicapped children
   B. Student review of tapes for analyzing elements of disabilities
   C. Parent visitations using video-tapes
   D. Classroom teacher visitations or conferences using tapes
   E. Therapist evaluation of therapy sessions through delayed replay of tapes
   F. Conducting a control program using the same instructional materials and conducting classroom teacher and parent conferences as in the experimental program but without any video-tape support
   G. Pre and post testing of students and pre and post parent and classroom teacher questionnaires
   H. Compilation of data and statistical analysis

2. The activities were selected specifically to meet the program objectives.

3. Methods used:
   A. VTR techniques:
      1) closeups of oral region for stop-action, instant and delayed replay
      2) split screen for comparison analysis
         - a camera focused on child and one on materials
         - a camera focused on child and one on therapist
         - each camera focused on one child
      3) long shots of individual or group for delayed replay of stuttering and language therapy
      4) self-monitoring and analysis of error through instant replay
      5) self-monitoring and analysis of error through delayed replay
      6) monitoring of action of articulators during taping
      7) delayed replay of taping sessions for analysis of improved skills
      8) stop-action for analysis of articulatory placement for production of phoneme

   B. Therapy techniques:
      1) articulation drills
      2) auditory skill drills
      3) imitation of therapist
      4) memory sequencing

5) spontaneous conversation (delayed replay for carryover analysis)
6) controlled speech activities, filling in missing response, reading aloud, use of structured sentences
7) listening activities (delayed replay for analysis of accuracy of response)
8) story telling
9) puppetry
10) auditory discrimination activities
11) lipreading
12) tongue and swallowing exercises
13) gross and fine muscle coordination activities

4. A. Weekly schedule: Van rotated among 3 schools each week for six weeks, four blocks of schools during the year.
B. Daily schedule: Varied with each therapist but all children received video-taped therapy sessions of a half-hour's duration in groups of one to four. Some examples follow.
1) a few minutes of individual therapy per child, a group activity, followed by evaluation of the tape
2) work on production of sounds in words, sentences, and conversational speech, then review tape
3) group activities using auditory discrimination in conjunction with production of phonemes
4) sequencing a story while producing fluent speech for developing language abilities and improving grammatical syntax
5) sound production activities involving tactile stimulation and visual-auditory monitoring
6) review, gross or fine muscle motor activity, activity to elicit responses, tape evaluation.

5. Pupils were grouped by grade level, age, speech or language dysfunction, and severity of involvement or stage of progress.

6. Teacher pupil ratio ranged from 1-1 to 1-4 with 1-3 being the average.

7. Pupils received feedback by self, peer, or therapist analysis of tapes or by a reinforcement reward system developed by individual therapists.

8. Parents received feedback through video session visitations, phone or video tape supported conferences, and occasional written notes.

9. Amounts and kinds of practice, review, or quiz activities varied with individual programs. Therapy itself consists of review, practice, and periodic checks on progress.
Examples: Games or activities that required patterned responses
Drill activities
Home exercises and progress charts
Phoneme production activities
Discrimination activities

10. The audio-visual stimuli of the VTR equipment was the major motivating force for pupils and parents. In fact the motivating aspect was one of the project's strongest features.

    Other motivating procedures varied with individual therapists.
    Examples: token rewards
    social rewards (teacher praise or approval)
    a library of instructional materials
    scoring progress
    competitive activities

11. The same activities, therapy procedures, and instructional materials were used for the experimental and control classes except for the use of videotaping in the experimental treatment. The main difference was that the experimental program added a visual auditory stimulation not possible in the control program. The control program also lacked the self-stimulation afforded by televising.

Instructional Equipment and Materials

1. Were special materials developed or adapted for the program? How and by whom?
2. What other major items of equipment and materials did the program require? In what amounts?
3. How were key aids and materials used in connection with the various program activities?
4. If a comparison is being made between program and nonprogram persons, were there important differences between these groups in kinds and amounts of materials provided, or in methods of use?

1. The following materials were developed specifically for the project:
   a. Classroom teacher questionnaire by coordinator, therapists, project evaluator, and Dr. Ben Burton, consultant in a 3 day workshop
   b. Parent survey by the above group
   c. Student knowledge test by the Videcor staff, spring, 1970
   d. Therapist checklist by the coordinator, staff, and Dr. Jerry Phillips, director of Pupil Personnel Services, spring, 1970
   e. Master score sheets by the coordinator and project secretary, fall, 1970
   f. Daily log book format by the coordinator, fall, 1970

2. Instructional Equipment--
   1 video tape recorder; 2 cameras with zoom lens; 1 control console with split screen, cornering and stop action capabilities and 3 monitors; 5 microphones; 1 amplifier; 1 TV monitor; 1 27 foot motorized classroom (Pace Arrow) to house equipment and provide therapy space.

   Instructional Materials--
   4 Peabody Language Kits, Fairbanks Robinson Perceptual Motor Program I, Levels 1 and 2, and Ruth Cheves Visual-Motor Perception Program, a complete set of 66 puppets, 138 commercial phonics, word-making, and phoneme games or activities.

3. All of the materials were used in the video taped and control therapy sessions according to the techniques developed by the individual therapists.

4. Therapists attempted to use exactly the same instructional materials and techniques (allowing for the individual needs of the students) in the control program as in the experimental. All variables were eliminated except the use of video tape procedures: instant replay, delayed replay, stop action, monitoring during taping and check of progress through comparison replay of tapes made at the beginning and end of treatment. In other words, the method of use was the main variable.

Parent-Community Involvement

1. What role, if any, did parents have in the program?
2. Were meetings held with parents? Why? How often?
3. What role, if any, did various community groups have in the program?
4. How was the community kept informed?
5. If problems with parents or the community affected the program, what steps, if any, were taken to remedy the situation?

1. Parental involvement was an important facet of the project. Parents were involved at all stages of operation. The initial parent survey was conducted in an interview situation for all parents whose children were involved in the evaluation design. A mid-point survey was completed by mail for all parents whose children participated for two years or who were dismissed from therapy as corrected. A final post survey interview was again conducted at the conclusion of the project.

   Parents of most children participating in the project held parent conferences with the therapists and observed tapes of therapy sessions. Parents were also invited to attend video taped therapy sessions. These two activities were among the most valuable and beneficial of all project activities.

2. Two parent group meetings involving several schools were held, one in the fall and one in the winter. These meetings were poorly attended and parents who did participate were those who had already been reached. The therapists felt that the intimate conferences and visitations were much more successful in involving parents in the therapeutic process.

3. No community groups were involved in the program.

4. One feature story with two pictures was printed in the local newspaper when the project first became operational. Otherwise information has been that generated by enthusiastic parents in school neighborhoods or by therapists through informal conversations at social or community gatherings or professional meetings. Thevan has been exhibited at Fresno State College, at Back to School and Open House nights in several schools, to the district Health Services Staff, a District Administrators and Coordinators meeting, and at the Council for Exceptional Children State Conference held in Fresno in May, 1972.

   Periodic reports have been presented to the Fresno Unified Board of Education whose meetings are open to the public.

5. There were no significantly adverse parent or community reactions to the program.

Budget

1. From what sources were program funds obtained?
2. What was the total cost of the program?
3. What period of time was covered by these funds?
4. What is the per pupil cost of the program? What was the formula for computing this figure?
5. How does the per pupil cost of the program compare with the normal per pupil cost of the schools in the program?
6. Where can the reader get more detailed budget information?
7. Of the total cost of the program, give rough dollar estimates of developmental costs, implementation costs and operational costs.
8. Give the costs for the entire project period by budget categories (i.e., professional salaries, contracted services, etc.).

1. ESEA Title III plus district support

2. Total Cost:

1969-70	(actual)	$31,474.83
1970-71	(actual)	28,004.49
1971-72	(estimated)	34,702.00
		$94,181.32

3. The toal project cost covered the period July 1, 1969 to June 30, 1972

4. Per pupil cost of program: $39.81
   Formula: Total Cost divided by Total Number of Pupils served (2366) = per pupil cost.

5. The Videcor project per pupil cost compares favorably with the normal per pupil cost in that all salaries for therapists participating in the project were district supported and project activities were conducted in conjunction with the regular program. It is difficult to compute actual per pupil costs of the regular program because estimates are based on average daily attendance which is computed on an "individual instruction basis" if therapy groups are limited to four children or less. Weekly caseloads range from 59 to 90 and A.D.A. is computed from minutes of attendance. In the Fresno Unified 1972-73 preliminary budget, cost to the district is stated as $285.00 per A.D.A. plus state excess cost reimbursement of $2,000 per A.D.A.

6. Budget information may be obtained from:
   Mrs. Bonnie J. Smith, Coordinator
   ESEA Title III Project Videcor
   3034 E. Cornell, Room 20
   Fresno, California 93703

7. Developmental Costs: $27,400
   Implementation Costs: 35,203
   Operational Costs: 31,577

8.	Professional Salaries: (including fixed charges)	24,700.78
	Non-professional Salaries: (including fixed charges)	25,334.22
	Contracted Services:	300.00
	Materials and Supplies:	7,170.04
	Travel:	1,146.75
	Other Expense: (evaluation costs and maintenance and operation of equipment)	5,326.04
	Capital Outlay:	30,203.49

Special Factors

For use of potential adopters of the program:

1. What modifications of the program are possible?
2. What are the suggested steps in adopting this program?
3. What are some things others should avoid in adopting this program?
4. Can the program be phased in, beginning on a small scale? How?
5. Can parts of the program be adopted without taking the whole program? What parts?

1. A. The use of the mobile classroom is not essential if adequate housing for speech, hearing, and language classes are available. "Adequate" should include reasonably sound proof rooms, room isolated from heavily trafficed areas, supplemental lighting, enough electrical outlets with sufficient amperage.

   B. Much less sophisticated equipment can be purchased if careful attention is given to comparison features of the various brands. Insist on more than one demonstration - compare picture quality, fidelity of sound, replay compatability with other brand equipment, longevity features, costs of maintenance and repair, availability of maintenance service.

   C. Although the Videcor staff felt one of the strong features of this project was having a skilled technician to operate and care for the equipment, the use of less complex equipment would allow therapists to run and maintain the equipment without determent if users are well trained.

2. A. Introduce therapists to use of video tape. Some people are reticent about being "exposed" on camera but overcome their reluctance through training and experience. Those who never become comfortable with this media should be exempt from using it if they have made a serious effort to do so.

   B. Conduct pre-service workshops. Continue training until participants show competence in desired skills.

   C. Plan objectives, activities, and evaluation.

   D. Develop schedules and monitoring procedures.

   E. Conduct training phases of operation - Staff analysis and recommendation for modifications if needed.

   F. Implement project.

3. A. Limit target populations. The Videcor project attempted to reach too many people over too short a span of time. Gear the project to <u>one</u> phase of consideration each year such as: first year - in-service training for therapists to develop expertise in video tape techniques as well as professional skills
   second year - development of procedures for utilizing video tapes in parent counseling
   third year - video taped therapy for improvement of handicapped children's speech and language skills.

fourth year - development of procedures for utilizing video tapes for classroom teacher in-service or counseling

B. Determine number of staff participants and time allotments. The Videcor staff felt 12 therapists using one set of equipment was too high a ratio. The tight schedule was too restrictive to allow sufficient time for tape review, staff analysis and planning for program improvements.

4. The program can be as limited or extensive as any one staff feels capable of implementing. The seriously limiting factor is the cost of the equipment and a district's ability to purchase it.

5. Parts of the program can be adopted one at a time and, in fact, this is advisable. (See item #3 above.)

Dissemination

Discuss how project information was disseminated during the past budget period.

1. Provide an estimate of the number of unsolicited requests for information from both within and outside the project area.

2. List the number of visitors from outside the project area.

3. Provide the cost of dissemination during the last budget period.

4. Provide the total cost of dissemination including prior budget periods (if possible).

Information was disseminated in periodic reports to the District offices of Planning and Research and Federal and State Projects, and the Board of Education. One newspaper article featured the project. Other information was disseminated informally at professional or parent meetings.

1. There were two unsolicited requests for information from outside the project area and 15 from within.

2. There were no outside visitors. From inside the project area 194 parents, 85 classroom teachers, and 68 other school personnel actually observed televised activities.

3. Minimal - the cost of gas and oil to drive the van to its display destination - some overtime pay for the operator-driver if activities were conducted outside regular working hours.

4. Insignificant

EVALUATION

Choosing Participants

1. How were the children and the adults in the program chosen?
2. How was a comparison group (if any) chosen?
3. Were participants in the program involved in other programs?
4. How many participants left the program?
5. Which participants left?
6. Were participants added to the program to replace dropouts?
7. Were there many participants who did not receive the program often because of poor attendance?
8. Did participants attend voluntarily?
9. Was the evaluation group only a portion of the program group?

1. A. The 12 speech, hearing and language therapists were chosen from those who expressed a willingness to participate in the project and represented a variety of ages and experience as well as a degree of competence. Replacement for 2 therapists occurred during the second operational year of the project because of necessary reassignments to other programs.

   B. All children in the regular speech, hearing, and language caseloads in the assigned experimental schools were exposed to the Videcor treatment. For evaluation purposes a random sample of 60 first grade and 60 second grade children were selected for pre and post testing over a 2 year period. An additional 40 first graders were selected the second year to replace those children who had moved or been dismissed from therapy as corrected.

2. Experimental schools were matched with control schools of a similar school population and socio-economic and ethnic composition. An evaluation control group was selected from the caseload in these schools exactly as for the experimental program.

3. All participants in Videcor conducted a regular program concurrently. In addition two of the first operational year therapists participated in an NDEA guidance project.

4. Two therapists left the program because of reassignments and were replaced. A total of 39 student evaluation cases (both experimental and control) left the program over the two year period because of moving out of district, transferring to a non-participating school within district or dismissal from therapy where goals were achieved. Although a tally of those non-evaluation cases leaving the program was not kept, normal attrition did occur. Only 3 of the 597 children participating in the formal operational phase of the program were excluded by parental request.

5. Explanation given in item #4

6. Yes - see items #1-B and 4

7. Make-up sessions with the VTR equipment were made for all experimental program therapist absences. Students absences were not excessive enough to affect the validity of the data.

8. Participants did not attend "voluntarily" in that the project operated as a part of the regular instructional process. However any parent requests for exclusion were honored; there are a few of these requests every year in the regular program so it was not surprising to have 3 in Videcor. Actually, most youngsters, therapists, and parents were very enthusiastic about participation so few problems arose in this respect.

9. The evaluation group was only a portion of the program group.

Describing Participants

1. Which participants received the program?
2. How many participants received the program?
3. What are the ages or grade levels of pupils in the program?
4. Did the program serve many more boys than girls, or vice versa?
5. What achievement scores were available before the program with which to describe the program group?
6. Are there other special characteristics you should mention in describing the program group?

1. The speech, hearing and language handicapped students in 12 Fresno Unified School District elementary schools selected as representing the socio-economic and ethnic composition of the district participated in the Videcor program. The parents and classroom teachers of the randomly selected evaluation cases also received services.

   The 12 participating therapists received in-service training themselves and provided in-service training for the remainder of the staff.

2. 2,366 students received the program as follows:
   1,769 in the informal phase of experimintation during the first year when the project was not fully operational and in the periods of time when the van and equipment were available for use in non-participating schools. (control schools excluded)
   292 in the first formal operational phase who received 10 video-taped half-hour therapy sessions.
   305 in the second formal operational phase who received 12 video-taped half-hour therapy sessions.

3. Grade levels involved were kindergarten through sixth grade. Evaluation cases the first operational year were first and second graders and during the second operational year, the second and third graders who were continuing in the program, plus 40 additional first graders.

4. The program served more boys than girls; this is a typical phenomena in speech, hearing and language programs.

5. Pre-test scores from four measurement instruments were compiled before the first fully operational phase and again for replacements during the second operational phase.

6. The program group was representative of a regular speech, hearing and language program caseload, the majority of cases articulation problems, several stuttering or symbolization/language cases, a few voice and moderately hard-of-hearing cases. Most youngsters were progressing academically within the normal range although several had repeated kindergarten or first grade. Mentally retarded or cerebral palsied youngsters were excluded from the formal phase of operation because the scope of the program became too broad to treat any more variables.

Measuring Changes

1. What measures were applied to find out whether the program's aims were achieved?
2. How were the measures matched to the objectives?
3. How were the measures matched to the pupils' capabilities?
4. Were observers specially trained?
5. How much time elapsed between testings?

1. A. Four instruments were pre and post administered each fully operational year to measure student gain:
   1) The Photo Articulation Test for articulatory skills
   2) The Wepman Test of Auditory Discrimination for auditory skills
   3) The Houston (1st year) and Utah (2nd year) Tests of Language Development for language facility
   4) The project developed Student Knowledge Test to measure the student's knowledge of his disorder.

   B. A project developed Parent Survey was pre, mid-point and post administered to measure gain in parental awareness and attitudes.

   C. A project developed Teacher Questionnaire was pre, mid-point and post administered to measure classroom teacher gain in awareness and support through classroom activities.

   D. A project developed Therapist Checklist was pre and post administered the final project year to measure gain in professional and technical expertise.

2. The measures applied were selected or developed specifically to measure whether or not objectives were met, to what extent they were met and if the experimental treatment was superior to traditional treatment (the control program).

3. The measures applied were matched to the pupils' capabilities in that the test instruments covered the age and ability ranges of the children involved in the program. Since random selection was used the range of capabilities in both control and experimental program would be that found in any typical therapist caseload.

4. The evaluation design did not include outside observers. - NA

5. In the first fully operational year all student pre and post measures were administered at the beginning and end of the school term - October and May. Significant gains were apparent when pre and post scores for all students were compiled. However, no significant differences were revealed when method of treatment (experimental vs control) was considered.

   Therefore, during the second operation year half of the evaluation cases were pre and post tested as before beginning and end of the school term and half were pre and post tested immediately preceding and following treatment. This allowed making comparison through a short-term evaluation as opposed to a long-term one. (For results, see the following sections pertaining to evaluation)

Presenting Data

1. What data were obtained from the measures applied?
2. What measures of central tendency were used?
3. What measures of dispersion were used?
4. Include graphs and/or tables which present data more clearly.

1. Raw score data for each child and sums of raw score data for subgroups were collected from the Photo Articulation Test, the Student Knowledge Test, the Wepman Test of Auditory Discrimination, and the Houston and Utah tests of language development for language facility for experimental and control populations respectively. In addition, frequencies on all questions for experimental and control groups for May, 1971 and May, 1972 were obtained for the Parent Survey and the Teacher Questionnaire. Raw score data was also collected for the Videcor Therapist Checklist administered to therapists in September, 1971 and May, 1972.

2. Mean scores were generated for the raw score data collected from the Photo Articulation Test, the Student Knowledge Test, the Wepman Test of Auditory Discrimination, the Utah Test of Language Development, and the Videcor Therapist Checklist. Frequencies and percentages of total responses for each question were collected for the Parent Survey and the Teacher Questionnaire. Numbers (N) of students referred by classroom teachers for project participation were compared with mumbers (N) of students diagnosed by therapists for Videcor participation so that percentages of students mutually identified for treatment would be generated. These percentages of agreements were computed in October, 1970 (pre) and October, 1971 (post).

3. Standard deviation was used in the analysis of variance which was undertaken for the analysis of data collected on the Photo Articulation Test, the Wepman Test of Auditory Discrimination, the Utah Test of Language Development, and the Student Knowledge Test.

4. Include graphs and/or tables which present data more clearly.
See pages 33a to 33e

TABLE I

Means Scores of Videcor and Control Students on the four student tests administered to 1/2 of each population in October, 1971 and May, 1972 (Group I) and to 1/2 of each population immediately before and after the period of special Videcor Treatment (Group II)

Test	GROUP I (Beginning and End of Year)				GROUP II (Before and After Block Treatment)			
	Experimental		Control		Experimental		Control	
Photo Articulation Test	Pre Mn. (Errors)	Post Mn. (Errors)	Pre Mn. (Errors)	Post Mn. (Errors)	Pre Mn. (Errors)	Post Mn. (Errors)	Pre Mn. (Errors)	Post Mn. (Errors)
Grade 1	15.33	7.60	15.71	8.14	15.59	9.47	14.75	11.63
2	8.90	2.80	9.20	4.00	9.33	4.92	7.91	3.00
3	6.82	1.64	9.33	4.78	6.27	3.27	6.63	4.63
Wepman Test	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)
Grade 1	9.27	3.60	10.64	6.29	8.82	7.00	11.06	6.19
2	5.90	1.40	5.90	2.30	3.17	2.17	3.73	2.73
3	5.18	3.73	6.89	4.33	4.27	3.18	4.13	2.13
Utah Test								
Grade 1	31.53	40.67	28.71	35.29	31.35	34.24	31.56	33.25
2	38.30	47.60	39.70	42.00	39.33	41.42	37.18	40.27
3	40.55	44.00	39.22	37.89	40.36	44.82	39.00	40.25
Student Knowledge Test	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)	(Errors)
Grade 1	14.27	2.93	14.93	8.14	13.06	6.29	12.19	9.81
2	7.90	2.10	4.80	1.70	5.17	2.50	5.18	2.36
3	6.73	1.64	7.56	1.89	5.55	3.55	6.63	5.38

TABLE II

Mean scores of Videcor and Control students on three of the student tests administered in October, 1970 (Pre) and May, 1972 (Post). Longitudinal gains are delineated for each grade in each population.

	Experimental				Control			
	N	Oct., 1970 Mn. Score (Errors)	May, 1972 Mn. Score (Errors)	% Gain	N	Oct., 1970 Mn. Score (Errors)	May, 1972 Mn. Score (Errors)	% Gain
Test								
Photo Articulation Test								
Grade 2	10	9.30	1.50	84%	8	15.25	4.63	70%
Grade 3	9	23.22	2.56	89%	9	15.00	3.44	77%
Wepman Test								
Grade 2	10	6.70	4.00	40%	8	10.50	4.50	57%
Grade 3	9	11.33	1.44	87%	9	9.67	2.00	79%
Student Knowledge Test								
Grade 2	10	8.00	1.80	78%	8	7.88	1.75	78%
Grade 3	9	12.22	1.89	85%	9	8.78	1.78	80%

TABLE III

erage Self rating scores for each category on a Videcor Therapist Checklist (self rating le) submitted by twelve Videcor therapists in September, 1971 (Pre) and May, 1972 (Post). high average self-rating indicates a high rating for the various categories).

	Sept., 1971 (Pre)		May, 1972 (Post)		Post - Pre
	Subjects	Average self-rating	Subjects	Average self-rating	
A. Videcor Therapist Self-Evaluation Checklist					
1. Personal Evaluation (15 Items)	12	39.93	12	59.27	+19.34
2. Therapy Evaluation (9 Items)	12	38.78	12	46.11	+ 7.33
B. Videcor Therapy Technique Checklist					
1. Auditory Therapy Technique (7 Items)	12	46.29	12	53.00	+ 6.71
2. Physical Therapy Techniques (4 Items)	12	31.50	12	39.25	+ 7.75
3. Language Therapy Techniques (7 Items)	12	29.71	12	33.86	+ 4.15
4. Materials Used in Therapy (3 Items)	12	43.33	12	44.67	+ 1.34
5. Child Awareness Techniques (7 Items)	12	33.86	12	34.43	+ .57
6. Other (2 Items)	12	47.00	12	47.00	0
C. Video-Taping Procedures Checklist					
1. Video-Taping Value to Therapy (10 Items)	12	48.60	12	55.20	+ 6.60
2. Video-Taping Value to Treatment of Special Cases. (8 Items)	12	46.13	12	48.75	+ 2.62

TABLE IV

A comparison of the Classroom Teachers Referrals in the Fall of 1970 and 1971 with the Actual Case Eligibility List compiled by the Speech and Hearing therapists in each of the two years.

	Fall 1970 Frequencies				Fall 1971 Frequencies				D(1971) - D(1970)
	A	B	C	D	A	B	C	D	
	N Tch. Ref.	N Ther. ID.	N Agree	% C/B*	N Tch. Ref	N Ther. ID.	N Agree	% C/B*	
Control									
Grade 1	53	143	42	29.4	75	90	46	51.1	20.7%
Grade 2	43	112	28	25.0	43	68	27	39.7	14.7%
Total	96	255	70	27.5	118	158	73	46.2	18.7%
Experimental									
Grade 1	63	164	43	26.2	65	125	47	37.6	11.4%
Grade 2	64	105	34	32.4	51	47	23	48.9	16.5%
Total	127	269	77	28.6	116	172	70	40.7	12.1%
			Control Total	27.5			Control Total	46.2	
			Experimental Total	28.6			Experimental Total	40.7	
				-1.1				5.5	

*Percentages (%) in column D are derived by dividing the number of cases for which the therapists and classroom teachers agree treatment is needed (column C) by the number of cases which the therapists identified for treatment (column B).

TABLE V

A comparison of the Rates of Dismissal of Students with Speech, Hearing, and Language Disorders From the Fresno Unified School District Speech and Hearing Programs since the 1967-68 School Year.

School Year	Videcor Dismissal* Rate	Non-Videcor* Dismissal Rate
1971-1972 (21 Therapists)	32%	26%
1970-1971 (21 Therapists)	27%	26%
1969-1970 (21 Therapists)	-	23%
1968-1969 (16 Therapists)	-	25%
1967-1968 (13 Therapists)	-	20%

*The rates of dismissal were gathered by dividing the number dismissed from therapy by the number enrolled for therapy. The total numbers dismissed and enrolled were compiled from the Annual State Reports which individual therapists submit to the California State Department of Education.

TABLE VI

Average Mean Scores on the Videcor Therapy Technique Checklist Regarding the Suitability for Video-Taping in Various therapy techniques submitted by twelve Videcor Therapists in September, 1971 (Pre) and May, 1972 (Post). (High Average Mean Scores indicate a high suitability for Video-taping in therapy).

Technique	Sept., 1971 (Pre) Subject	Sept., 1971 (Pre) Average Mean Score	May, 1972 (Post) Subject	May, 1972 (Post) Average Mean Score	Post - Pre
a. Auditory Therapy Technique (7 items)	12	53.14	12	48.29	-4.85
b. Physical Therapy Technique (4 items)	12	43.00	12	38.50	-4.50
c. Language Therapy Technique (7 items)	12	40.86	12	36.00	-4.86
d. Materials Used in Therapy (3 items)	12	37.00	12	34.67	-2.33
e. Child Awareness Technique (7 items)	12	37.43	12	41.43	+4.00
f. Other (2 items)	12	49.50	12	46.50	-3.00

Analyzing Data

1. What analyses were undertaken of the data?
2. What was the basis for judging the progress of the program group?
3. What comparisons were drawn for subsamples?
4. What evidence is there that those who attended more gained more from the program?

1. For the evaluation of procedural objective 2.0, an analysis of variance was completed on the data gathered considering method of therapy (Videcor vs. Control), grade (1st, 2nd, and 3rd), and Time-of-Test (pre vs. post) all as sources of variation. (See Project Note no. 25, items 1 and 2)

   For the evaluation of procedural objectives 3.0 and 6.0, a chi-square test of significance between Videcor and Control frequencies of responses were applied to particular questions and sets of questions on each of the two surveys used. (See Project Note No. 26, Items 1 and 2)

   For the evaluation procedural objective 4.0, a comparative analysis of frequencies between checklists completed by therapists in October, 1971 and May, 1972 was made. (See Table III, page 33c)

   For the evaluation of procedural objective 5.0, a chi-square test for significance of difference between teacher referrals in the fall of 1970 and the fall of 1971 was made. (See Table IV, page 33d)

2. October, 1971 (pre) and May, 1972 (post) test data were collected and analyzed to assess progress of the program group. These data were collected with the Photo Articulation Test, the Wepman Test of Auditory Discrimination, the Utah Test of Language Development, and a special Students Knowledge Test. As a test strategy variation, half of the program group was tested immediately before and after the special six week block of Videcor treatment. (See Project Note no. 26, items 1 and 2)

3. The following comparisons of subsamples were made with the data collected from the student's tests (See Project Note No. 25):
   a. Method of therapy (Videcor vs. Control)
   b. Grade (1st vs. 2nd vs. 3rd)
   c. Time-of-Test (Pre vs. Post)
   d. Method vs. Grade
   e. Method vs. Time-of-Test
   f. Grade vs. Time-of-Test
   g. Method vs. Grade vs. Time-of-Test

4. An analysis of variance considering method (Videcor vs. Control) and Time-of-Test (October, 1970 vs. May, 1972) were computed on the raw score data gathered from the students who were in the program at least two full years. The growth of students in the program for two years was thus compared to the results of a similar control group. (See Project Note 26, items 3 and 4)

FRESNO UNIFIED SCHOOL DISTRICT
Office of Planning and Research Services

Project Note No. 25
Title III

Dr. Benjamin B. Burton
May 3, 1972

Videcor Project (Designs for Test Data)

1. Grades 1, 2, and 3 (Tested over entire year)

   Measure: Photo Articulation Test (raw score)

   Method: Analysis of Variance (Mixed design)

   Source of Variation
   Between Student (b)
   - Method of Therapy (M) (Videcor vs. Control)
   - Grade (G) (1st, 2nd, and 3rd)
   - M x G
   - Error (b)

   Within Student
   - Time of Test (T) (Pretest vs. Posttest)
   - M x T
   - G x T
   - M x G x T
   - Error (w)

2. Design presented in (1) can be used for testing over therapy time as well as over entire year. And the design can be used for the other tests: Wepman, Utah, and Special.

3. Grade 3 (1971-72) and Grade 2 (1970-71)

   Measure:

   Method: Analysis of Variance (Mixed design)

   Source of Variation
   Between Student (b)
   - Method (M) (Videcor vs. Control)
   - Error (b)

   Within Student
   - Time of Test (T) (Oct. '70 vs. May '72)
   - M x T
   - Error (w)

4. Grade 2 (1971-72) and Grade 1 (1970-71)

Same design as (3).

BBB:nw

FRESNO UNIFIED SCHOOL DISTRICT
Office of Planning and Research Services

Project Note No. 26
Title III

Dr. Benjamin B. Burton
May 3, 1972

Videcor Project (Design for Questionnaires)

1. Parent Survey

   Report frequencies on all questions for experimental and control groups, last May and this May listed separately.

2. Teacher Questionnaire

   Same as in (1).

BBB:nw

Procedural Objectives and Findings

1. What were the procedural objectives of the program?
2. State the findings in ordinary language for each objective.
3. Indicate clearly success or failure for each objective.
4. Can the findings be generalized, or are they applicable only to the group served by the program?
5. What were the causative factors for unmet objectives?
6. What are the other important findings which were not anticipated?

Procedural Objective 1.0:
An organization and management structure will be established which will facilitate the achievement of the objectives.

Personnel hired to implement this objective were: Mrs. Bonnie J. Smith, one-half time as project coordinator, Mrs. Charlene M. Maxwell, one-half time as secretary; Mr. Sigmund R. Smith, full time as van driver and VTR equipment operator; and Mr. Larry Zander, one-tenth time as program evaluator.

1.1 Selection of 1971-72 Videcor Therapists

Prior to the opening of school, fall 1971, the program director and coordinator chose 12 of the 22 Fresno City Schools speech and hearing specialists to participate in the experimental progam. Selection was based on an expressed desire to participate in the project and on a variety of training and experience.

1.2 Equipment modifications to improve technical aspects of the program.

The necessary modifications were made and the therapists assessed the increase in equipment proficiency.

1.3 Program development activities-scheduling, screening, determination of caseload.

1.3.1 Speech and hearing specialists arranged weekly schedules in assigned schools. Teacher referral forms were distributed.

1.3.2 Teacher referral lists for all first and second grade classes in experimental and control schools were collected in the Fall, 1971. To evaluate procedural objective 5.0, these referrals were compared with those made by the same teachers in the Fall, 1970.

1.3.3 The 12 Videcor therapists screened all first and second grade classes and teacher referrals in experimental and control schools.

1.3.4 From this screening, they determined their caseload for regularly scheduled therapy. (State law mandates a maximum caseload of 90 children per therapist per week.)

1.3.5 Caseload lists with pertinent information were then turned in to the program evaluator.

1.3.6 Therapists developed daily schedules in individual schools.

1.3.7 The van schedule was developed by the program coordinator according to the weekly schedules.

1.3.8 Experimental and control caseload selections were returned to the 12 Videcor therapists by the project evaluator.

1.3.9 The Videcor therapists were assigned the van for several sessions in non-experimental/control schools to become familiar with taping procedures.

1.4 Selection of additional first graders in experimental and control schools to replace cases moved or dismissed because of attainment of goals.

From the lists of first graders deemed eligible by classroom teachers and speech therapists for participation in the speech programs (experimental and control), the project evaluator randomly selected enough students to complete the caseloads of the twelve therapists.

1.5 Conducting parent counseling sessions and inservice meetings for therapists and classroom teachers.

Instead of having a night counseling session in each of the 12 experimental schools as described in 1.5.1.2 of the project continuation application, only two sessions were held. Parents of students in three of the experimental schools met jointly in the first counseling session. Parents of students in three other experimental schools met jointly in the second counseling session.

All aspects of Videcor therapist inservice delineated in the project application were conducted as described, except that the planned three day pre-service workshop (1.5.2.1) was conducted instead on October 8 and 9, 1971.

Aspects of classroom teacher inservice were not conducted as described. It was difficult to arrange schedules so that all classroom teachers could visit the Videcor treatment sessions for children enrolled in their classes and for classroom teachers of Videcor students to attend formal inservice meetings on the Videcor program.

1.6 Evaluation of project

The primary purpose of the proposed project is to test the effectiveness of a multi-sensory approach (the Videcor program) designed to improve the articulation and linguistic skills of children who have speech or language handicaps. It is assumed, also, that exposing the children's parents, teachers, and therapists to the video-tape process is an integral part of such improvement. In addition, a test was also made to evaluate how effectively the treatment improves children's knowledge concerning their own disorder.

1.6.1 Monitoring

1.6.1.1 The program evaluator, Mr. Larry Zander of the Office of Planning and Research Services, was responsible for seeing that all phases of the evaluation were conducted. He performed the following functions: (1) identifying the independent and dependent variables and the sample to be studied; (2) monitoring the administration of evaluative instruments; (3) monitoring the extent to which the planned

program was implemented; (4) distributing and collecting teacher questionnaires; (5) determining the statistical treatment suitable for analyzing the data; (6) preparing an evaluation report based on an analysis of data; and (7) communicating process and final interpretation of results and problems to appropriate personnel and agencies.

1.6.1.2 The program coordinator, Mrs. Bonnie Smith, was responsible for: (1) all scheduling of pre and post testing; (2) administration of parent pre and post questionnaires; (3) collection of data; (4) scheduling for assignment of van and make-up sessions; (5) review of program progress; (6) overseeing completion of all activities as they pertain to procedural objectives; and (7) conducting inservice training sessions.

1.6.2 Testing: Target population - speech, hearing or language handicapped students.

1.6.2.1 The measurement instruments selected were the Wepman Test of Auditory Discrimination, the Photo Articulation Test, and the Utah Test of Language Development.

1.6.2.2 In addition, a Student Knowledge Test was developed.

1.6.2.3 In October, 1971, the program evaluator conducted a workshop with the Videcor therapists on uniform administration of all tests and questionnaires.

1.6.2.4 Pre testing of half of the students in experimental and control groups was conducted in October and November, 1971. Post testing of these same students was conducted in May, 1972 by the therapists.

Pre testing of the other half of the students in the experimental and control groups was conducted at the beginning of the respective periods of block treatment. Post testing of these same students was conducted at the end of the respective periods of block treatment. (See Table I, page 33a)

1.6.3 Completion of parent survey: Target population - parents of handicapped children.

1.6.3.1 In the spring of 1971 the therapists conducted interviews with parents of all children selected for evaluative purposes and completed the pre parent questionnaires.

1.6.3.2 Post parent questionnaires were administered spring, 1972, to those parents who had returned the pre questionnaire.

1.6.4 Completion of therapist check list: Target population - speech, hearing and language therapists.

1.6.4.1 Initial check lists were completed in the fall, 1971.

1.6.4.2 As therapists finished their experimental blocks, they completed checklists in the spring, 1972.

1.6.4.3 Responses were compared (fall, 1971 vs. spring, 1972) in June, 1972, at the conclusion of the project. (See Table III, page 33c)

1.6.5 Completion of teacher referrals and classroom screening by therapists: Target population - classroom teachers of handicapped children.

A comparison of the classroom teachers referrals in the fall of 1970 and 1971 with the actual case eligibility list compiled by the Speech and Hearing therapists in each of the two years was made at the conclusion of the project. (See Table III, page 33c)

1.6.6 Completion of teacher questionnaire on supportive classroom activites: Target population - classroom teachers of handicapped children.

1.6.6.1 In May, 1971, the pre Teacher Questionnaires were mailed by the Office of Planning and Research to all the first and second grade teachers whose children were selected for evaluation.

1.6.6.2 Post teacher questionnaires were distributed in May, 1972 to those teachers who had returned the pre questionnaire.

1.6.7 Statistical treatment of data

1.6.7.1 All evaluations for Objectives 2.0 - 6.0 of this project were based upon data collected from first, second, and third grade handicapped children and from their parents, teachers, and speech and hearing therapists. Data collection was completed by May 29, 1972. Tests of the effectiveness of the Videcor program will be based on appropriate comparisons between two groups of speech-handicapped children; those children randomly assigned to the Videcor treatment, and those children randomly assigned to the control treatment. The control condition consisted of the regular therapeutic treatment of speech disorders administered hy the schools. Comparisons were also made on data collected from the parents, classroom teachers, and speech and hearing therapists of these two groups of children.

1.6.7.2 Data collected from all pre and post testing of students and from pre and post parent and teacher questionnaires was compiled and analysis of responses completed.

1.6.7.3 Statistical treatment of all data collected during the 1969-71 project periods was completed by June 30, 1972.

Procedural Objective 2.0:

Selected first, second and third grade speech, hearing or language handicapped children in the Videcor schools will have better knowledge of their disorders and will use more appropriate articulatory, and linguistic skills

than those 1st, 2nd and 3rd grade handicapped children in the control schools as measured by significantly different mean scores (at .05 level) on the Photo Articulation Test, the Wepman Test of Auditory Discrimination, the Utah Test for Language Development, and a special Student Knowledge Test.

2.1 Method for and results of testing the effects of Videcor and Control programs on students' articulation.

Criterion Measures: Scores on the Photo Articulation Test (PAT). This instrument tests articulation proficiency for consonants, vowels, and dipthongs. It is well organized for effeciency of administration. Pictures are very carefully selected to elicit predictable responses.

Experimental Design: Statistical test of significance was based upon an analysis of variance. The analysis included two between-student variables and one within-student variable. A within-student variable is simply one involving repeated measures on the same student. A between-student variable, then, involves comparisons between scores from different students. (See Project Note No. 25, item 1)

Thus, seven different test of significance (F Tests) occurred for this design. The most critical was those involving the Time-of-Test variable, especially as Time-of-Test relates to Method of Therapy (the M x T interaction). The question is: "How does pretest versus posttest means compare between the two methods?" or "For which method is there the greater mean gain?"

Results: Using an unweighted means solution, a summary of the analysis of variance showed no significant difference between gains made by those in the Videcor schools and the selected students in the non-Videcor schools on the Photo Articulation Test for the groups tested at the beginning and end of the year, or for the groups tested immediately before and after the periods of Special Videcor treatment.

The .05 level of confidence was used in each of the analyses for each of the standardized tests administered. Significant gains were made by both the Videcor and non-Videcor students in both test strategies when comparing the pre and post test means, but in answer to the question, "Which method (Videcor along with regular therapy versus regular therapy) is there the greater mean gain?", on the P.A.T. results indicated neither produced significantly better results in either of the pre-post test strategies.

2.2 Method for and results of testing the effects of Videcor and Control programs on students' auditory discrimination.

Criterion Measures: Scores on the Wepman Auditory Discrimination Test. This instrument indicates whether the level of auditory discrimination is up to maturational level for the individual child. The test also indicates which sounds are most difficult for the child to recognize auditorily. The Wepman can be administered quickly and is standardized.

Experimental Design: The design will be the same as that used for testing articulation differences, the only changes being the dependent variable.

Results: The analysis of variance using the total score on the Wepman test also showed no significant difference between the pre and post test mean score for students receiving Videcor treatment and for those which did not in either test strategy. Once again, significant gains in pre and post mean scores were made by both groups in both test strategies.

2.3 Method for and results of testing the effects of Videcor and Control programs on the students' language functioning.

Criterion Measures: Scores on the Utah Test for Language Development. This test provides a language scale which can be used to assist in the diagnosis of language disorders.

Experimental Design: The design again was the same as that used for testing articulation differences, the only change being the dependent or test variable.

Results: Again, no significant difference was found between the gains in mean scores made by the Videcor and non-Videcor groups in either test strategy. However, again the gains made in the posttest scores from the pretest scores were significant for both the target and control groups with both test strategies.

2.4 Method for testing the effects of Videcor and Control programs on students' knowledge concerning their own speech disorders.

Criterion Measures: Scores on a special Student Knowledge Test for detecting how much a child knows about the characteristics of his speech disorder. This test was developed by the staff for this project. It was revised following analysis of pre and post testing conducted during the 1970 - 1971 project period. Scores are non-standardized.

Experimental Design: The application of the Knowledge Test will yield scores that will be analyzed using the same design model as presented for testing articulation differences.

Results: No significant differences were found involving the method variable in either test strategy. The difference in the pre and post test means for the Videcor group was not significantly different from the means of the non-Videcor control group.

Procedural Objective 3.0:

The parents of students receiving Videcor treatment will have a better knowledge of deviations in their children's speech and language patterns and will respond with more positive attitudes toward the disabilities than those parents of speech or hearing deficient children in the control schools as measured by significantly different (at .05 level) responses to a questionnaire.

3.1 Parents of experimental and control cases completed pre and post questionnaires.

Though parent questionnaires were developed in lay language, the staff felt that many parents would be unfamiliar with some of the terminology and would

fail to answer certain portions if they were unsure of a question's exact intent. Because of this, it was felt that mailing the questionnaires or distributing them through the school would bring poor returns. It was decided to administer the pre questionnaire in an interview situation. Appointments were made and therapists completed the questionnaire forms during the interviews. When both parents worked, interviews were conducted during home visits. A few parents who were reluctant to have the therapist visit the home were interviewed by telephone.

Return on the parent pre questionnaire was 97.5 percent. One hundred and ninety-nine completed the pre questionnaire. The one hundred and ninety-nine included ninety-six parents of children in Videcor schools and one hundred and three parents of non-Videcor control children. Out of the one hundred and ninety-nine parents who responded to the pre questionnaire, 152 or 76 percent completed the post questionnaire. Many of the parents who completed the pre questionnaire were no longer available for the post questionnaire. Most of the parents responding were mothers, but several couples or fathers alone participated in the interviews.

3.2 Method for testing the effects of Videcor and Control programs on parents' knowledge of their children's speech disabilities and for testing differences in parents' attitudes between Videcor and Control programs.

Criterion Measures: Frequencies of responses obtained on a Parent Survey (questionnaire) specifically developed for use in this project.

Experimental Design: Chi-square tests of significance between Videcor and Control frequencies of responses were applied to particular questions and sets of questions on the Parent Survey.

Results: Many of the questions in the parent questionnaire were included to furnish the Speech and Hearing Therapist information about the home environment and the parent-child relationship that prevails in the homes of children identified as having speech or hearing difficulties. A reporting of results of these particular types of questions will not be made in this report, but have been forwarded to the project coordinator.

The results of three questions which specifically related to Objective 3.0 are reported below.

To the question, "Do you work with your child to help improve his or her speech"?, parents were to respond either yes or no. The results to this question are shown in Table 1 with the number and percentage of responses of both the Videcor and non-Videcor control parents on the post questionnaire. The differences between the responses of the Videcor and Control parents were not significant, $p < .05$, however.

TABLE 1

	Post Questionnaire			
	Yes		No	
	#	%	#	%
Videcor parents	24	83%	5	17%
Control parents	26	59*%	17	39%

*Percentages in instances will not total one hundred as some parents returning the questionnaire did not respond to a particular question.

Another question asked, "How much difficulty being understood in school do you feel your child's speech has caused him or her?" Parents were to respond either "very much, some, almost none, none, or don't know." To simplify reporting, in Table 2 "very much" and "some" responses were combined as were "almost none" and "none" responses. "Don't know" responses were not reported. Table 2 includes the number of responses and percentages for both groups of parents on the pre and post questionnaire. The differences between responses of Videcor and Control parents on the posttest were not significant, $p. < .05$, however. Differences on the pretest were not significant, $p. < .05$, either. TABLE 2

	Pre Questionnaire				Post Questionnaire			
	Very Much/Some		Almost None/None		Very Much/Some		Almost None/None	
	#	%	#	%	#	%	#	%
Videcor parents	8	27%	19	63%	12	38%	15	48%
Control parents	11	28%	25	64%*	8	18%	33	75%

*Percentages will not total one hundred as "don't know" responses were not reported.

As shown in Table 2 Videcor parents changed their responses to say that they do feel that their child's speech did cause him or her difficulty in school on the post questionnaire. By comparison the Control parents changed their responses to say that they do not feel that their child's speech did cause him or her difficulty in school on the post questionnaire. This difference between the two groups would indicate that Videcor parents have developed a slightly better knowledge of their child's speech problems and how they effect their communication in school than have the Control parents. This difference, therefore, would be construed as a function of the method of treatment in favor of the Videcor method.

The number and percentage of responses of both groups to the question, "How much difficulty does your child have in getting people to understand what he or she is saying around home?", are shown in Table 3.

TABLE 3

	Pre Questionnaire				Post Questionnaire			
	Very Much/Some		Almost None/None		Very Much/Some		Almost None/None	
	#	%	#	%	#	%	#	%
Videcor parents	8	25%	23	74%*	7	22%	24	77%
Control parents	9	21%	33	79%	5	12%	38	88%

*Percentages will not total one hundred as "don't know" responses were not reported.

The responses of the Videcor and Control parents did not change appreciably on the pre and post questionnaire. Although it appears a higher percentage

of control parents changed their responses to the "almost none/none" categories on the post questionnaire than the Videcor parents. Yet since the differences in change of responses between groups was slight, and since more parents in both groups responded "almost none/none" on the post than on the pre questionnaire, this suggests that all parents feel their child was having less difficulty in getting people to understand him/her. However, tests show that the differences between questionnaires (pre vs. post) and the differences between responses of Videcor and Control parents in each of the questionnaires were not significant, $p. < .05$.

Procedural Objective 4.0:

The speech and hearing therapists will be able to evaluate therapeutic procedures; to identify successful techniques and discard those that are unproductive and to upgrade skills and develop a greater variety of techniques as indicated by their responses on a checklist after viewing selected video tapes of their therapy sessions.

4.1 Method for evaluating the ability of speech and hearing therapists: to evaluate therapeutic procedures; to identify successful techniques, to upgrade skills, and develop a greater variety of techniques.

Criterion Measures: Frequencies of responses obtained on a checklist developed for use in this project.

Experimental Design: Comparative analysis between checklists completed in September, 1971 and May, 1972.

Results: The results of mean score data in the comparative analysis between checklists as seen in Table III, page 33c indicate that the Videcor therapists have appreciably changed their responses on the post rating scale to the extent that they found 1) that they as therapists felt better about their work after being involved in the Videcor program for the last year 2) that they as therapists found a greater variety of therapy techniques to be more successful than they originally perceived as indicated by results on post rating scale and 3) that the therapists found a greater variety of aspects of video-taping to be of appreciable value to treating a greater variety of speech and hearing problems than they had originally perceived on the pre rating scale. These results would indicate that this procedural objective in itself was successfully met. And since the therapists who worked with Videcor students were the same therapists who worked with the control students (using the best therapy techniques they could), the knowledge of therapy technique and procedure gained by the therapists in the Videcor program could have easily carried over to treatment rendered to the control students. At any rate, therapist knowledge of technique and procedure improved, and this knowledge was applied by therapists to both program populations.

Procedural Objective 5.0:

The classroom teachers of the children receiving Videcor treatment will demonstrate improved ability to screen and refer students who can best profit from speech therapy as indicated by comparison of teacher screening and referrals fall, 1970 with fall, 1971.

5.1 Method for evaluating the ability of classroom teachers to screen and refer students for speech therapy.

Criterion Measure: Teacher screening and referral forms on which teachers list those children they feel can best profit from speech therapy.

Experimental Design: Chi-square tests for significance were applied to the teachers referrals in fall of 1970 and 71 with actual caseload lists compiled by the speech and hearing therapists.

Results: As the comparative analyses of teachers referrals of fall of 1970 with fall of 1971 indicate, see Table IV, page 33d, the teachers of children receiving Videcor treatment did a better job of screening and referring students for treatment in the fall of 1971 than they did in the fall of 1970 (28.6% agreement of cases with therapists in 1970 as compared to a 40.7% agreement on cases with therapists in 1971 - a 12.1% gain in agreement from fall of 1970 to fall of 1971). Yet, the analysis of referrals made by teachers in the control schools indicate that they had an even greater gain from fall, 1970 to fall, 1971, than did the classroom teachers of Videcor students (27.5% agreement of cases with therapists in 1970 as compared to a 46.2% agreement on cases with therapists in 1971 - a 18.7% gain in agreement from fall, 1970 to fall, 1971). However, the difference between the experimental and control percentage of agreement of classroom teacher referrals was appreciably less in the fall of 1970 than the difference between the same two groups in the fall of 1971. This information would suggest that Control classroom teachers demonstrated more gain in their ability to screen and refer students with speech problems than did the classroom teachers of Videcor students. The differences in referral agreements was not significant, $p. < .05$, between Videcor and Control first grade classroom teachers in October, however. And, the differences between groups on the same referral list was not significant with second grade teachers. Thus, it appears that the ability of classroom teachers to screen and refer students in a function of grade (age, physical maturity, etc.) with all grade one teachers having greater success at screening and referring than grade two teachers. This could suggest that it might be easier for therapists and first grade teachers to agree upon the identification of students who need referral than it is for agreement between therapists and second grade teachers, with ease of agreement being a function of child's age, physical maturational level, emotional maturational level, etc. The differences between referrals made by first and second grade teachers on the posttest (fall, 1971) were not significant; however, first grade teachers showed a better percentage of agreement in referrals than second grade teachers.

Procedural Objective 6.0:

The classroom teachers of the children receiving Videcor treatment will demonstrate better and increased carryover activities which support the speech therapy program than teachers in control schools as measured by significantly different responses to a questionnaire on supportive classroom activities.

6.1 Teachers completed pre and post questionnaire on supportive classroom activity for children with communicative disorders.

Pre teacher questionnaires were distributed by the Fresno City Schools Office of Planning and Research Services in May, 1971. Of the one hundred and fifteen teachers who had experimental or control cases enrolled in their classes, ninety-seven responded. Return of the pre teacher questionnaire was 84%

Post teacher questionnaires were distributed in May, 1972 to those teachers who completed and returned the pre questionnaire. There were 78 teachers still teaching in grades one and two in target and control schools who had completed the pre questionnaire. Of the seventy-eight post questionnaires sent out, seventy-four responded. Return on the post teacher questionnaire was 94%.

6.2 Methods for evaluating the classroom teachers' usage of better and increased carry-over activities which support the speech therapy program.

Experimental Design: Chi-square tests of significance between Videcor and Control were applied to the frequencies of responses to particular questions on the teacher questionnaire.

Results: As in the parent questionnaire, only those responses to questions which relate to the evaluation of the stated objectives are reported in this report. A frequency distribution of responses to all questions on both the pre and post questionnaire has been forwarded to the project coordinator.

The results of the chi-square tests of significance indicated that there were two questions in which the differences between the responses of the teachers in the Videcor schools and those in the control schools was significant using the .05 level of confidence. One question asked, "How much help have you had from the speech therapist in identifying children with speech difficulties?" Teachers were to check either "very much," "considerable," "not much," or "none". Twenty-five teachers in the Videcor schools responded either "very much" or "considerable," whereas in the control schools only nineteen teachers responded in these two categories on the post questionnaire. The same differences occurred on the pre questionnaire for this question, favoring Videcor.

The other question asked, "How much do you think speech therapy helps the child with a speech problem?" Again teachers were to respond either "very much," "considerable," "not much," or "none." Twenty-five teachers in the Videcor schools responded either "very much" or "considerable," whereas in the Control schools only seventeen teachers responded in these two categories on the post questionnaire. The differences occurred on the pre questionnaire for this question also, favoring Videcor again. The reason that the differences in responses between method were significant was that a much greater number of Control teachers responded "not much/none" to both questions on both questionnaires (pre and post) than did Videcor teachers. The differences between Videcor and Control teachers responses on these two questions suggest that teachers of Videcor students demonstrated better carryover activities than did the Control teachers. However, there were no significant differences indicating that classroom teachers of Videcor students demonstrated increased carryover activities from the year before.

To the question from the Teacher Questionnaire, "How much time in your daily classroom program is centered around language-speech activities?", teachers were to respond "Very much", "considerable", "not much", or "none". The results of this question indicate that a much greater number of teachers responded "Very much/considerable" than did the teachers who responded "not much/none". This would indicate that all teachers spend considerable time in their classes with carryover activities which support the Speech and Hearing program. However chi-square tests of significance revealed that there were no significant differences in the responses made between the Videcor and Control teachers, nor were there significant differences between pretest and posttest results for either group.

Project Objectives and Findings

1. What were the project objectives of the program?
2. State the findings in ordinary language for each objective.
3. Indicate clearly success or failure for each objective.
4. Can the findings be generalized, or are they applicable only to the group served by the program?
5. What were the causative factors for unmet objectives?
6. What are the other important findings which were not anticipated?

Project Objective(0.0)

Speech and Hearing Therapists of the Fresno Unified School District will determine the suitability and effectiveness, in comparison with present procedures, of video-taping as a multi-sensory approach to therapeutic procedures for the development of adequate communication skills for students handicapped by speech, language, or hearing disabilities; and will demonstrate appropriate uses of video tapes for parents counseling and in-service training of therapists and classroom teachers.

0.1 All of the data gathering activities completed for the analyses of procedural objectives 1.0 - 6.0, and the analyses of those data taken together constituted the evaluation strategy for this "mission objective". In addition to those data, data was gathered to complete a study of the progress made by the students who were in the program for both the 1970-71 and 1971-72 school years. (See Table II, page 33b for mean scores gathered on these students). Data was also gathered to measure the dismissal rates of students who were in the Videcor program as compared to the dismissal rates of those children who were in the control program. Information was gathered from the analysis of the Therapist Checklists to determine the suitability of video-taping as a therapeutic approach to developing adequate communication skills for the speech handicapped. (See Table VI, page 33f for mean score results gathered from these checklists) And information from specific questions on the Parent Survey and the Teacher Questionnaire was utilized to determine the extent that the parents and classroom teachers were involved in the therapeutic process. Also the suitability of using video-taping as a method for the inservice training of Speech and Hearing Therapists was determined from information gained in the "Self-Evaluation" category of the Videcor Therapists Checklist.

The analyses of those data, therefore, variously provided opportunities to study the degree to which the program met the following needs as described in the original project application: 1) to expedite correction of mild and moderate communication disorders through a media which combines auditory and visual stimulation with replayable capabilities in these two dimensions for assessment by both child and therapist; 2) to subsequently reduce caseloads to allow enrollment of the approximately 800 children currently on the waiting list; 3) in lieu of the high cost of such equipment to school districts, to determine if the media would indeed effect more rapid and permanent mediation of communicative disorders; 4) to afford a means for the specialists to appriase, evaluate and improve their own therapeutic procedures since district fiscal inadequacy precludes financial provisions for adequate supervisory personnel; 5) to more intensively involve parents and classroom teachers in the therapeutic process; and 6) to expand consultative services for classroom teachers.

0.2 Method for evaluating progress in articulation made by students who were in the Videcor program for both the 1970-71 and 1971-72 school years.

Criterion Measure: Socres on the Photo Articulation Test (PAT). This instrument tests articulation proficiency for consonants, vowels, and dipthongs. It is well organized for effeciency of administration. Pictures are carefully selected to elicit predictable responses.

Experimental Design: A statistical test of significance was based upon an analysis of variance. The analysis included a between student variable, a within student variable, and the interaction of these two variables. (See Project Note No. 25, items 3 and 4 for statistical design). The critical question is: "How do the pretest (October, 1970) vs. posttest (May, 1972) mean scores compare between the two methods?" or "For which method is there greater mean gain?"

Results: Using an unweighted means solution, a summary of the analysis of variance showed that current third grade students who were in the Videcor program for two full years made significantly more improvement in articulation than did the students who were in the Control program for two years (See Table II, page 33b for mean scores). See Technical Note A in the Appendix for the statistical test. However, the mean gains made by current second grade students on the PAT were not significantly different at the .05 level of confidence.

0.3 Method for evaluating progress in auditory discrimination made by students who were in the Videcor program for both the 1970-71 and 1971-72 school years.

Criterion Measure: Scores on the Wepman Auditory Discrimination Test. This test indicates whether the level of auditory discrimination is up to the maturational level for the individual child. The test also indicates which sounds are most difficult for the child to recognize auditorily. The Wepman can be administered quickly and is standardized.

Experimental Design: The design was the same as that used for testing articulation differences, the only change being the dependent variable.

Results: The analysis of variance showed no significant difference, at the .05 level of confidence, between the mean gains made by target and control students in either of the current second or third grade populations who had been involved in the speech programs for at least two years.

0.4 Method for evaluating the progress made by students who were in the Videcor program for both the 1970-71 and 1971-72 school years on knowledge of their own speech disorders.

Criterion Measure: Scores on the special Student Knowledge Test for detecting how much a child knows about the characteristics of his own speech disorder. This test was developed by the staff for this project. Scores are non-standardized.

Experimental Design: The application of the Knowledge Test yielded scores that were analyzed using the same design model that was presented for testing articulation differences.

Results: The analysis of variance showed no significant difference, $p. < .05$, between the mean gains made by target and control students in either the second or third grade populations which were given speech and hearing therapy for the last two full years.

0.5 Method for evaluating the rate of dismissal of students involved in speech and hearing programs.

Criterion Measure: Therapists who worked with students in both of the programs (Videcor and Control) dismissed speech and hearing handicapped students from their caseload lists as soon as the student was able to overcome his diagnosed speech or hearing disorder. Various criterion references measures were used by therapists to determine if students in either population had successfuly overcome his/her speech or hearing disorder. If so, then that child was dismissed from therapy.

Experimental Design: A comparative analysis of the dismissal rate made by therapists of students who had speech and hearing disorders and who were involved in the Videcor or Control speech and hearing programs in 1970-71 and 1971-72.

Results: According to Table V, page 33e, it appears that all speech and hearing students in the two programs were being dismissed at about the same rate during the two years studied. However, the table indicates that therapists in the Videcor program increased the dismissal rate in the 1971-72 year from 1970-71 school year more so than did the therapists in the Control program over the same two years. This could indicate that overcoming of speech disorders was a function of program, favoring Videcor, as witnessed by Speech and Hearing Therapists.

0.6 Method for evaluating the suitability of video-taping as a therapeutic approach to developing adequate communication skills for the speech, hearing and language handicapped.

Criterion Measure: Frequencies and average mean scores were compiled on responses made by therapists on the "Rate of suitability for Video-taping of ... techniques" category in the Videcor Therapy Technique Checklist.

Experimental Design: Chi square tests for significance were computed on the frequencies of responses made by therapists comparing the interaction between "not suitable" vs. "suitable" responses on the pre and the post Videcor Therapy Technique Checklist.

Results: The data on Table VI, page 33f seem to indicate that there was a tendency for therapist to suggest on the post rating scale that video-taping was not as suitable as a technique for therapy as they had suggested on the pre rating scale. The only exception to this was in the "child awareness category", where the therapists suggested a higher suitability rate for therapy in this area on the post scale than they did on the pre rating scale. However, chi-square tests for significance indicated that none of the differences found between the pre and post rating scales were significant, $p. < .05$, in any of the categories.

0.7 Method for evaluating the suitability of video-taping as a means for the therapists to appraise, evaluate, and improve their own therapeutic procedures.

Criterion Measure: Frequencies and average mean scores were compiled on the responses made by therapist on the "Personal Evaluation" category in the Videcor Therapists Self-Evaluation Checklist.

Experimental Design: Chi-square tests for significance were computed on the frequencies made by therapists comparing the interaction between "poor" versus "excellent" responses on the pre and the post checklists.

Results: As the data on the "Personal Evaluation" portion of the Videcor Therapist Evaluation Checklist indicate (See Table III, page 33c), the Videcor therapists perceived themselves as being much "better" therapists at the end of the year than they did at the beginning of the year. This information would indicate, then, that the improvement the therapists made over the year as judged by their own pre and post assessments of their abilities as therapists was a function of video-taping as a means for therapists to appraise, evaluate, and improve their own therapeutic procedures. This indicates that the use of video-tapes in the preservice workshops and the monthly inservice meetings, in which the therapists used video-tapes to compare, share, and determine successful techniques for good speech and hearing therapy, was a highly suitable method for training speech therapists. The chi-square test of significance indicated that the differences between the frequencies of responses were significant, $p. < .05$.

08. Method for evaluating the involvement of parents and classroom teachers in the therapeutic process.

Criterion Measure: Frequencies of responses to specific questions obtained on the Parent Survey and the classroom Teacher Questionnaire specifically developed for use in this project.

Experimental Design: A chi-square test of significance between Videcor and Control frequencies of responses were applied to particular questions on the Parent Survey and the Teacher Questionnaire.

Results: The results of two questions which specifically related to the level of involvement in the therapeutic process of parents and of classroom teachers are reported below.

To the question from the Parent Survey, "Do you work with your child to help improve his or her speech?", parents were to respond either yes or no. The results of this question are shown on a previous table, see page 35f, with the number and percentages of responses of both Videcor and Control parents on the post questionnaire. What is important about the data shown in the table is that a much greater percentage of Videcor parents responding to question said "yes" than the percentage of control parents who responded yes to the question. This would indicate that the level of parent involvement is a function of program, favoring Videcor in this case. This means that Videcor parents got well involved in the therapeutic process for their child. The chi-square test indicated that the differences in parent involvement between the two programs were not significant, $p. < .05$, however.

To the question from the Teacher Questionnaire, "How much time in your daily classroom program is centered around language-speech activities?", teachers were to respond "Very much", "considerable", "not much", or

"none". The results of this question indicate that a much greater number of teachers responded "Very much/considerable" than did the teachers who responded "not much/none". This would indicate that all teachers spend ample time in their classes involved in speech-language activities. However, chi-square tests of significance revealed that there were no significant differences between pretest and posttest result for either group.

Summary, Conclusions, and Recommendations:

As stated in the narrative description of the program, the Videcor method has gone through a considerable year of progress. This was a project which had great difficulties during the first year in getting off the ground and spent the second year attempting to catch up. The enthusiasm, determination, and dedication of the staff was responsible for the rapid implementation of an innovative program to help speech and language handicapped children in the Fresno Unified Schools during this third and final year of the project.

The project objective states that the Speech and Hearing Therapists will determine the suitability of video-taping as a multi-sensory approach to develop adequate communicative skills for the handicapped child. Much progress has been made by the therapists towards this end. From a staff who three years ago were almost totally unskilled in video-taping techniques, there are now twelve therapists and a project director who have, through trial and error, developed an expertise in an area in which experts are relatively nonexistent. Tapes have been developed which can be used effectively in therapy, inservicing of regular teachers, and informing parents. Checklists have been kept to self-evaluate the therapy techniques, video-taping procedures, the equipment, and the personal qualities of the therapists. Therapists have become familiar with a variety of diagnostic tests both standardized and those developed by their own staff to assist in the therapeutic process as well as to evaluate progress of the children.

Through a teacher questionnaire, teacher referral forms, and other communicative devices including visits to the van, teachers have become more intimately aware of their importance to the speech, language, and hearing program. Increased dialogue between therapists and regular teacher has developed. Through similar communicative devices, parents have begun to become aware of the program and the role they must assume. Progress was rapid.

As stated earlier in this report, the results of the three tests used to determine the progress of children who stayed in the Videcor and Control programs for at least <u>two</u> years indicated that only on one of the tests (Photo Articulation Test) did one of the groups (third grade students) show significantly more gain than the other. On this test the Videcor third grade students did significantly better than the Control third grade students. However, there was no significant difference between Videcor and Control second grade students on the PAT. And there were no significant differences found between two year Videcor and Control students in either the second or third grades on either of the other two tests used (the Wepman and the Student Knowledge Test).

No significant differences were found between Videcor and non-Videcor students when they (½ of the population) were tested at the beginning and at the end of the school year or when they (the other ½ of the population) were tested immediately before and after Videcor treatment.

The results indicated that parents of Videcor students had developed a better attitude toward correcting these speech disorders than did the parents of Control students. This could indicate that Videcor therapists did a good job of counseling parents. The differences in attitude was not statistically significant, however.

The results indicated that Videcor therapists improved in their technique as speech and hearing therapists and that this improvement was a direct result of their own inservice, which used video-taping as an inservice technique to improve therapy technique. The improvement was statistically significant.

The results also indicate that second grade classroom teachers in general did a better job of referring students for treatment than did first grade teachers. The differences were not significant, however. It was also concluded that classroom teachers of Videcor students did a better job in 1971 than in 1970, but that classroom teachers of Control students made even more improvement from 1970 to 1971 than did classroom teachers of Videcor pupils.

It was also concluded that the Videcor program helped to increase the number of students dismissed (due to "cure") from the caseload rolls of Fresno speech and hearing therapists from previous years.

The Videcor teacher questionnaire yielded information to conclude that teachers of Videcor students demonstrated better classroom carry-over activities than did the classroom teachers of Control students, but that the Videcor classroom teacher level of involvement in speech/language therapy was not any greater in 1971-72 than in 1970-71.

There are still some questions that have been raised for which there are yet no answers regarding the Videcor program. Among others, it would be interesting to study the following if use of the Videcor van and video-taping techniques were continued:

--How much measured effect can the Videcor treatment have on students compared to the regular therapy program when different therapists are providing treatment for Videcor than the Control students, and each not necessarily using the same techniques?

--What would be the effects upon classroom teachers if more extensive inservice on the Videcor program were provided them?

--What would be the effects of training speech and hearing therapists with a video-taping technique?

--What would be the effects on students if Videcor therapists were provided the opportunity to use video-taping as a therapy technique for longer blocks of time? Or does the impetus to improve come in the first few sessions?

The program coordinator and speech therapists in the project should feel great pride in the accomplishments which they were able to achieve in a short time period. The obstacles which they had to overcome, particularly during the first year of the project, were not small and their progress should be commended.

Of the four target groups for which treatment was provided (students with speech disorders, their classroom teachers, their parents, and their therapists) the project was successful only with the latter three. It was not successful with the student target population.

APPENDIX

Technical Note A

Source of Variation	Degree of Freedom	Mean Square	F	Significance Level
Method (Videcor vs. Control) X				
Time-of-Test (Pre vs. Post)	1	186.78	7.01	.05
Error-Within	16	26.63		